Instruction Manual

Fisher Scientific
General Purpose Laboratory Refrigerator/Freezer
13-986-106A

Fisher Scientific

Service Division (Repairs): 1-800-395-5442

Technical Support: 1-800-926-0505

Customer Service: 1-800-766-7000

Prior to calling for service, have the following information readily available:

Catalog Number: _____

Serial Number: _____

Date of Purchase: _____

The catalog number and serial number can be found on the data plate located on the left interior wall of the unit.

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Introduction

Thank you for selecting Fisher Scientific for your laboratory refrigeration needs. This equipment has been manufactured to "Fisher" equipment standards. If you have any questions about this equipment, contact you local Fisher Technical Service Representative @ 1-800-926-0505.

The Fisher General Purpose Lab Refrigerators are designed for the safe storage of biologicals and non-flammable reagents.

WARNING: THIS PRODUCT IS NOT APPROVED FOR STORAGE OF FLAMMABLE OR EXPLOSIVE MATERIALS. ALSO, IT IS NOT APPROVED FOR USE IN HAZARDOUS LOCATIONS CONTAINING EXPLOSIVE ATMOSPHERES. THIS PRODUCT IS NOT INTENDED FOR STORAGE OF UNSEALED CONTAINERS OF CORROSIVE MATERIALS.

Installation

Set the refrigerator so that it is firmly positioned on the floor and the front is raised just enough so that the door closes easily when opened halfway. Your refrigerator has two leveling screws – one on the right and one on the left. To adjust one or both of these, follow the directions below.

To remove the base grill:

1. Open the refrigerator door.
2. Grasp the grille with both hands.
3. Push down on the top edge of the grille to release the top clips.
4. Tilt the grille toward you to Release the bottom clips.
5. Pull grille away from refrigerator.

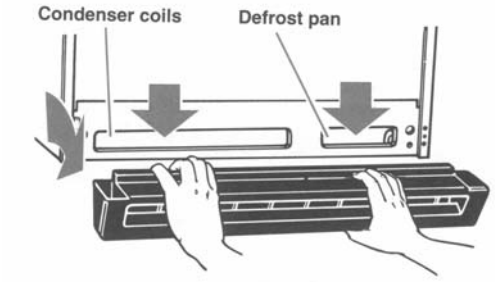

Fig. 1

6. To raise front, turn screw clockwise (see Fig. 2).
7. To lower front, turn screw counterclockwise.
8. Check with level.
9. Replace the base grille.

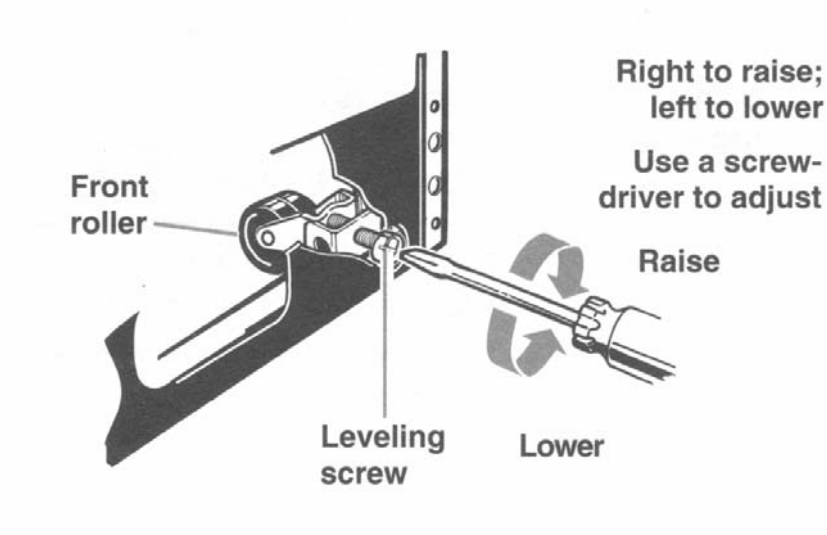

Fig. 2

Electrical Connection

Important (Please Read Carefully)

WARNING: FOR PERSONAL SAFETY, THIS APPARATUS MUST BE PROPERLY GROUNDED.

The power cord of this instrument is equipped with a three-prong (grounding) plug, which mates with a standard three-prong (grounding) wall receptacle to minimize the potential of electrical shock hazard. The customer should have the wall receptacle and circuit checked by a qualified electrician to verify the receptacle is properly grounded.

Where a two prong wall receptacle is encountered, it is the personal responsibility and obligation of the user to have it replaced with a properly grounded three prong receptacle.

WARNING: DO NOT UNDER ANY CIRCUMSTANCES, CUT OR REMOVE THE THIRD (GROUND) PRONG FROM THE POWER CORD. DO NOT USE A TWO-PRONG ADAPTOR PLUG.

Determine the total amount of current presently being used by other apparatus connected to the circuit that will be used by this unit. It is critical that this added current demand and other equipment on the circuit not exceed the rating of the fuse or circuit breaker in use.

CAUTION: BE SURE THAT THE POWER SUPPLY IS OF THE SAME VOLTAGE AS SPECIFIED ON THE NAMEPLATE.

Operation

CAUTION: If unit is tilted in excess of 30 degrees, level it, then wait 12 hours before applying power.

The interior of the refrigerator is divided into two sections. The upper section is the freezer. A separate door is provided for each section.

This refrigerator/freezer allows two operating modes, either *manual defrost* or *automatic defrost* (frost-free). The automatic/manual selector switch, located between the refrigerator and freezer temperature dials, is used to select the desired operating mode.

Manual Defrost

The Manual Defrost mode is intended for use where the samples contained require a narrow temperature control range for long term use. This mode prevents the defrost heater from periodically operating which eliminates the associated temperature rise. Operating the laboratory refrigerator in this mode will require that the unit be manually defrosted occasionally. The frequency of manual defrosting will be determined by the amount of door opening events and the ambient humidity of the environment in which the unit operates. For instructions on manual defrosting see *Maintenance*.

NOTE: When operating in manual mode, it may be necessary to defrost the unit every 4 to 5 weeks.

Automatic Defrost

Automatic Defrost (frost-free) operation is accomplished by a heater which is located near the refrigeration system's evaporator (behind the freezer's rear wall) which is timer controlled. The temporary rise in temperature melts the frost, which may have accumulated on the evaporator and in the freezer compartment. Operation of the laboratory refrigerator in this mode is recommended when the periodic temperature rise will not harm the material stored in the unit or when access into the unit is frequent.

The graduated thermostat dials on these units are not meant to be a direct indicator of operating temperatures.

Reference settings and resultant temperatures may vary slightly from unit to unit, and it may be necessary to make slight adjustments when seasonal or drastic changes occur in ambient conditions.

CAUTION: NEVER CHANGE THE MODE SWITCH FROM AUTOMATIC TO MANUAL WHEN THE EVAPORATOR FAN IS NOT RUNNING. EVAPORATOR FAN OPERATION CAN BE HEARD BY OPENING THE FREEZER DOOR.

Thermostat Adjustment

Thermostat dials are located inside the refrigerator at the top of the lower compartment. To set/change the temperature controls proceed as follows.

1. Set the refrigerator control to 3 (recommended setting). Refrigerator settings range from 1 (warmest) to 5 (coldest).
2. Set the freezer control to 3 (recommended setting). Freezer settings range from 1 (warmest) to 5 (coldest).

Allow the refrigerator time to cool down completely. If temperature adjustment is required, adjust the refrigerator control first. Wait at least 24 hours between adjustments. Finally, adjust the freezer control if necessary.

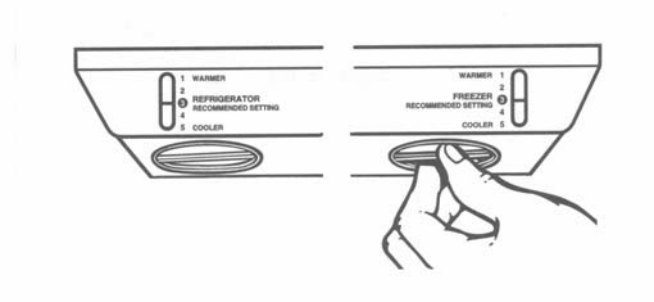

Fig. 3

Maintenance

Defrosting

At colder settings it may be necessary to defrost the compartments. Defrost the compartments when frost becomes 1/4 inch to 1/2 inch thick in any area of the refrigerator. It may be necessary to defrost the compartments frequently if the compartment is used often and/or there is high humidity.

To defrost, remove contents from the compartments, unplug the refrigerator and leave the doors open. Sponge up defrost water as it collects in the bottom of the compartments. Place a folded towel at the front of the compartments to soak up the water and to prevent it from running down the front of the refrigerator.

CAUTION: DO NOT USE A SHARP OR POINTED INSTRUMENT AS A SCRAPER. DAMAGE TO THE EVAPORATOR MAY OCCUR.

Cabinet Cleaning

The cabinet interior should be cleaned frequently. Any spilled liquid should be wiped off immediately since stains resulting from some spills could be permanent if not quickly removed. The most convenient time to clean the interior is after defrosting.

A mild detergent and lukewarm water or a solution of Bicarbonate of Soda (1 tablespoon per gallon of water) is recommended for cleaning the interior and exterior of the cabinet.

Surfaces should be rinsed and dried carefully and thoroughly.

CAUTION: DO NOT USE ANY TYPE OF ABRASIVE SUCH AS STEEL WOOL OR FLUIDS, SUCH AS GASOLINE, NAPTHA OR PAINT THINNER, THAT COULD BE HARMFUL TO PLASTIC MATERIALS, DOOR GASKET AND/OR PAINTED SURFACES FOR CLEANING.

The exterior of the cabinet should be cleaned occasionally with a cloth dampened with mild detergent water, rinse and dry. Do not use an abrasive or harsh cleaner on these surfaces.

Clean door gaskets with mild suds, rinse with clear water and wipe dry.

Defrost Water Pan

The defrost water pan, located behind the base grille at the right side of the refrigerator, should be cleaned at least once a year. To access the water pan remove the base grill as described under *Installation*. Simply pull out the pan and wipe it out with a damp cloth.

Condenser Coil

Clean the condenser coil regularly. Coils may need to be cleaned as often as every other month. This may help save energy. The condenser coils are located in the back of the refrigerator. To clean the condenser coil perform the following:

- Unplug refrigerator and pull out away from the wall.
- Remove screws securing base cover.
- Vacuum coil when they are dusty or dirty.
- Replace base cover
- Roll refrigerator back into place. Make sure there is 1inch between the back of the cabinet and the wall.
- Check to see if the refrigerator is level.
- Reconnect power.

NOTE: DISCONNECT POWER TO THE UNIT BEFORE MOVING THE REFRIGERATOR.

Troubleshooting

If the refrigerator is not operating properly, it may be a minor problem that can be easily corrected. Below is an outline which can help to detect minor problems. If service beyond the scope of this manual is needed, contact Fisher Service @ 1-800-395-5442.

A. **Does Not Run.**
1. Power is disconnected.
2. Circuit fuse has blown.

B. **Runs Continuously.**
1. If your refrigerator gets too cold from continuous running, turn the refrigerator control knob to a lower number.
2. If constant running does not cool cabinet adequately, perform the defrost procedure.

C**. Noise.**

The refrigerator has been designed for operation at a minimum noise level. All mechanical refrigerators make some noise, but this does not indicate trouble. Hissing, gurgling and churning noises (low level) are caused by the circulation of refrigerating gasses within the system and are normal.

D. **Clicking Sound:**

In case the compressor overheats, a safety device will shut off the motor, thereby preventing damage. This safety device, a thermal protector, functions to prevent damage to the motor windings in case of overload, overheating or improper power supply. A clicking sound, occurring about every 20 seconds, indicates that the thermal protector is functioning. If this happens, turn off and disconnect power to the refrigerator. The problem causing this action must be corrected before the unit is put back into service.

The thermostat makes a definite click when the refrigerator stops running. It also makes a sound when the refrigerator starts.

E. **Low Voltage:**

In certain areas, the voltage may be subject to fluctuation. Low voltage is one of the major causes of refrigeration failure. Low or fluctuating voltage may be the result of overloaded power lines or inadequate wiring. This condition may be noticed only during certain periods; and should it occur, we recommend contacting the local power company and/or a reliable electrician.

F. **Insufficient Cooling:**

Cause1-Unit frosted. Remedy1-Defrost
Cause2-Thermostat set too warm
Remedy2-Advance thermostat to cooler setting.

Technical Specifications

Temperature Range
- Refrigerator, F(C)…… 35.6 to 41.0 (2 to 5)
- Freezer, F(C)…… -18 to –10 (-0.4 to -14)

Capacity
- Net Storage Volume, cu. ft. (liters) 18.1 (513)
- Refrigerator, cu. ft. (liters)……..13.1(373)
- Freezer, cu. ft. (liters)……..…….5.0 (140)

Dimensions
- Width, in. (cm.)…….29-1/2(74.9)
- Height (cabinet top), in. (cm.)……..65-1/2(166.3)
- Height (hinge top), in. (cm.)……..66-1/4(168.4)
- Depth (with handles), in. (cm.)……...31-1/8(79.2)
- Depth (without door), in. (cm.)……...27-1/4 (69.2)
- Depth (door open 90), in. (cm.)…….58 (147.4)

Construction
- Exterior……Enameled Steel
- Interior……ABS Plastic
- Insulation……..Foamed Polyurethane
- Door Gasket…….Magnetic Soft Vinyl
- Shelves……(2) Steel Wire
- Shelf (freezer)……(1) Steel Wire
- Net Weight, lbs. (kg)…….235 (107)

Refrigerant – R134A Charge, oz…….3.75

* Product specifications are those in effect at the time of this publication. Fisher Scientific reserves the right to make additions, deletions or changes in the product line without further notice.

Spare Parts

Control Box	SPN106683

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General Purpose Laboratory Refrigerators
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2000 Park Lane
Pittsburgh, PA 15275